Lean Six Sigma

Carl R. Darnall Army Medical Center
Access to Care
Process: Telephone Appointing

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HP & S
TRICARE Division

8 November 2006

Unclassified

Project Membership

- Project Owner: HP & S – COL Cordts
- Project Sponsor: CRDAMC Commander – COL Sutton
- Process Owner: DCCS – COL Larsen
- Team Darnall members:
  - Chief, Clinical Operations Division
  - Patient Appointing Service Supervisor
  - Patient Appointment Clerks (4)
  - Management Analysis
  - Clinic Administrators (2)
  - IM/IT/Telephone Staff (3)
- MEDCOM One Staff Black Belt Candidate

LSS & Access to Care

- Access to Care & Lean Six Sigma
- TSG's September 06 Memo Access to Care Campaign
  - "our unified move to Lean Six Sigma process improvement."
  - Six areas of improvement
    - Customer Service ☑
    - Telephone Services
    - Provider Support Staff Utilization and Ratio
    - Primary Care Exam Room Utilization and Ratio ☑
    - Patient Appointing and Referral Management ☑
    - TRICARE On-Line Appointment Booking

DEFINE: Charter, VOC, SIPOC

Problem Statement: Long telephone wait times in excess of 3 minutes is believed to have led to numerous customer complaints which is believed to have led to lower patient satisfaction.

Goal Statement: Increase patient satisfaction to 75% and decrease the process hold time to less than 90 seconds for each call.

Business Impact: Type II (Cost Avoidance) & III (Intangible Benefits)

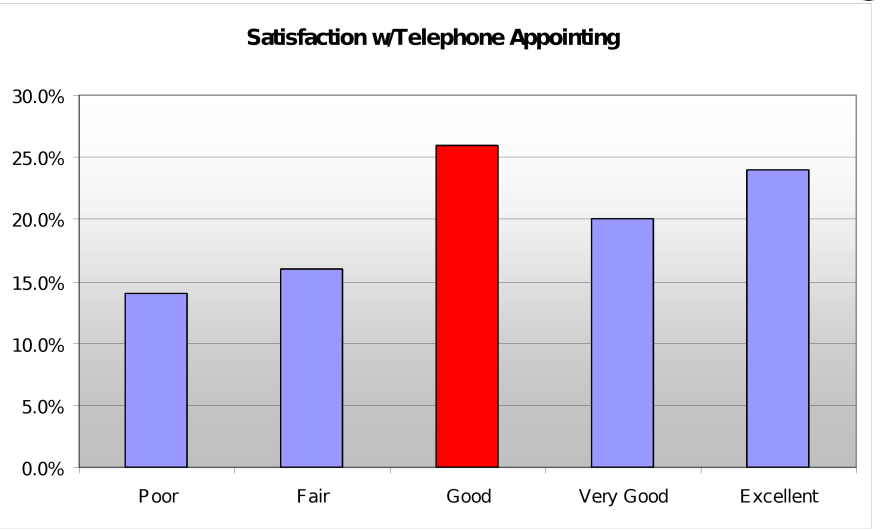
- Lower cost per call, lower staff turnover, decrease training costs& decrease learning curve costs
- Decrease handle time, wait time, abandon call rate, call back rates

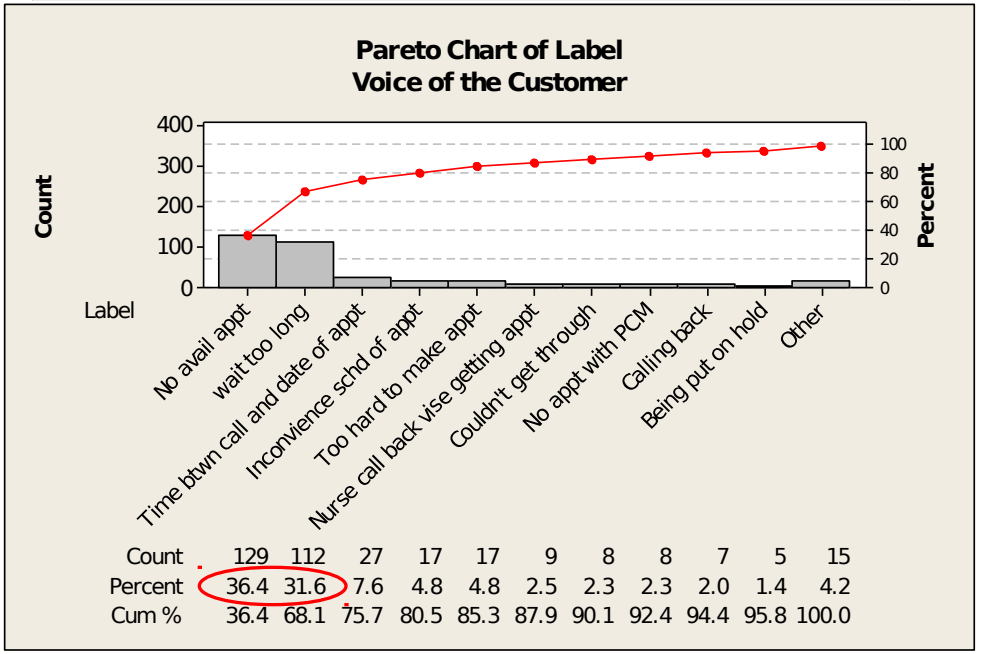
Project Scope:

- **In Scope:** The project will address the telephone appointing process at CRDAMC for making an appointment through central appointments.
- **Out of Scope:** The project will not address appointment availability and appointment scheduling convenience.

DEFINE: Voice of the Customer (VOC)

- Transactional Survey - Aug
  - Conducted after phone call
  - Checked level of satisfaction
  - 411 customers asked to participate
    - 295 participated
    - 116 refused (no appt)
- Results
  - 3 Areas of results obtained
    - System related: 6 items
    - Clerk related: 8 items
    - Appointment related: 7 items
  - Reasons dissatisfied
    - **No available appointment**
    - **Long wait times**

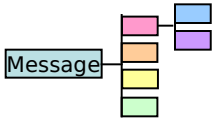



Pareto Chart of Label
Voice of the Customer
Count
Percent
Label
No avail appt
wait too long
Time btwn call and date of appt
Inconvience schd of appt
Too hard to make appt
Nurse call back vise getting appt
Couldn't get through
No appt with PCM
Calling back
Being put on hold
Other
Count 129 112 27 17 17 9 8 8 7 5 15
Percent 36.4 31.6 7.6 4.8 4.8 2.5 2.3 2.3 2.0 1.4 4.2
Cum % 36.4 68.1 75.7 80.5 85.3 87.9 90.1 92.4 94.4 95.8 100.0

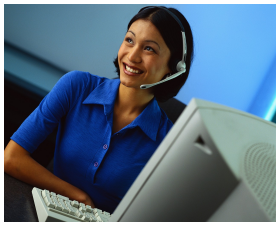
DEFINE:

Supplier-Input-Process-Output-Customer (SIPOC)

Call Initiated



Call Answered



Needs Identified

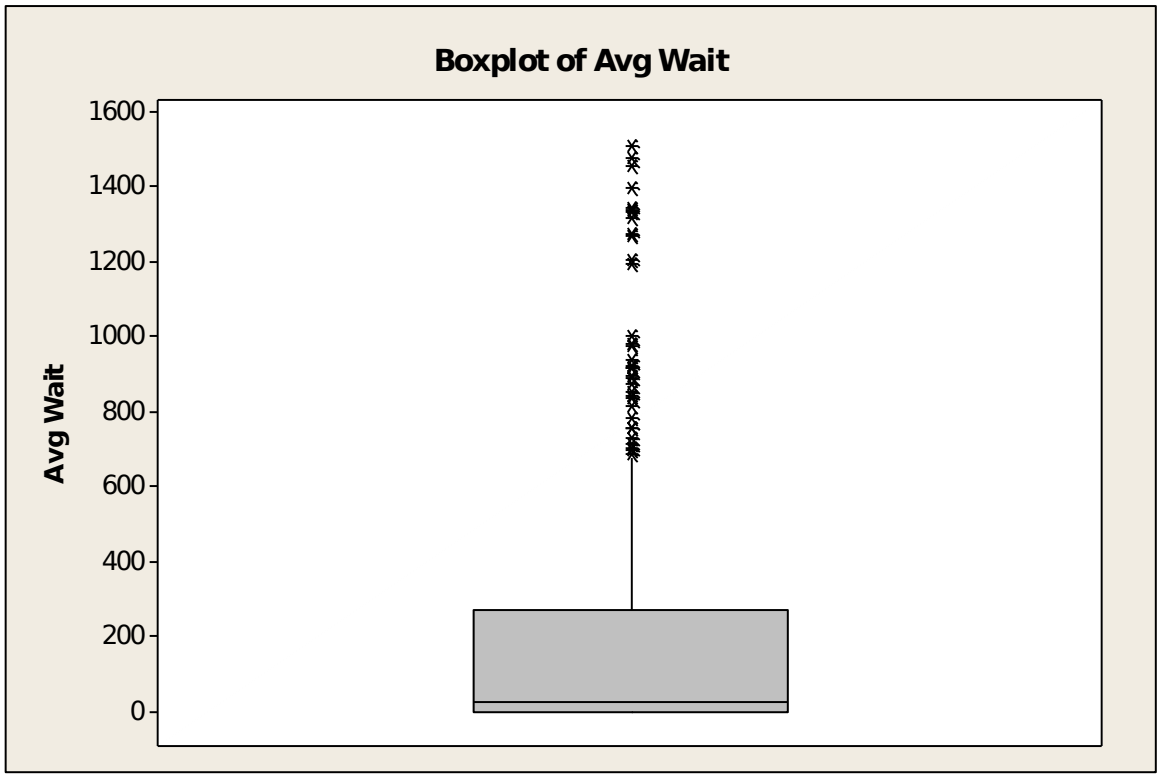
Call Ends

Start — 89 sec — 57-85 sec — 63-284 sec → Stop

Best case cycle time 204 seconds (Appt w/PCM Voice of Process)

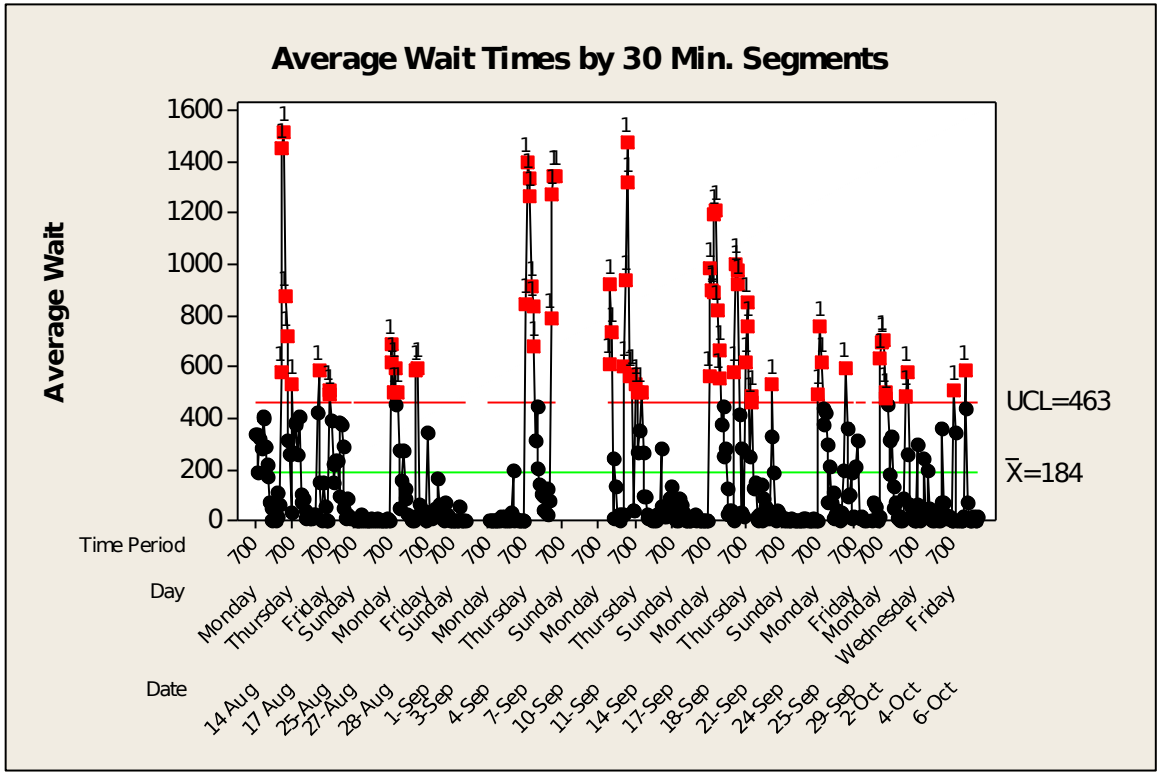
Takt time is 126 seconds at busiest time (Busiest Time, 14 agents, 1 call every 9 seconds Voice of Customer)

MEASURE: Baseline Data



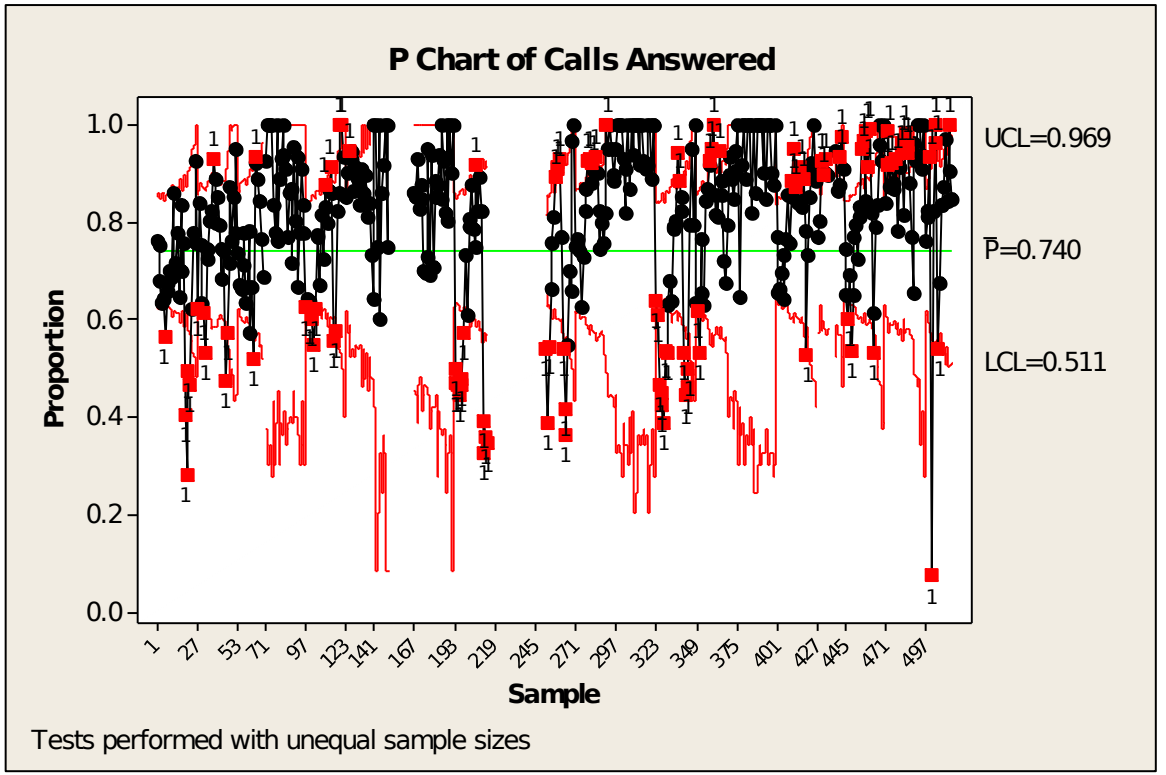
Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Avg Wait	455	59	184.5	14.1	300.2	1.0	2.0	27.0	275.0	1510.0

MEASURE: Baseline Data Process Analysis



Control Chart illustrates wait time averages by 30 minutes segments.

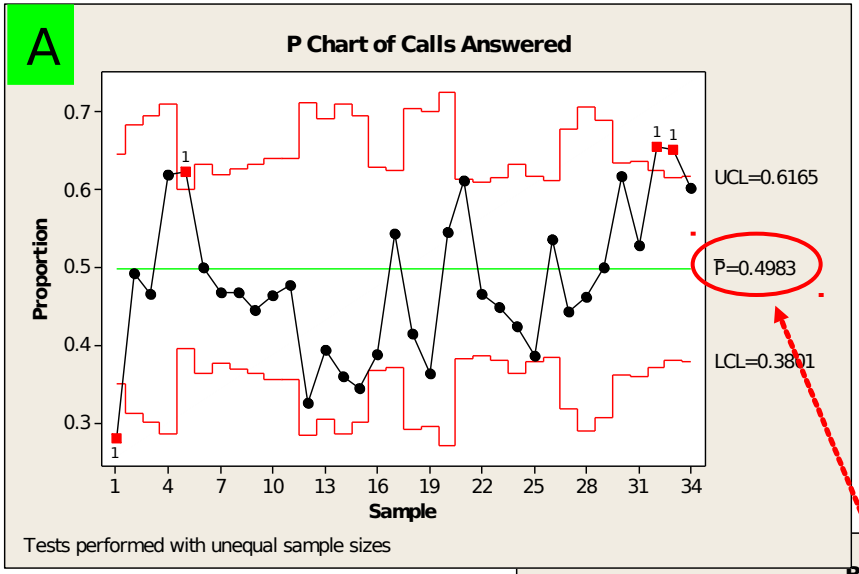
MEASURE: Baseline Data Process Analysis



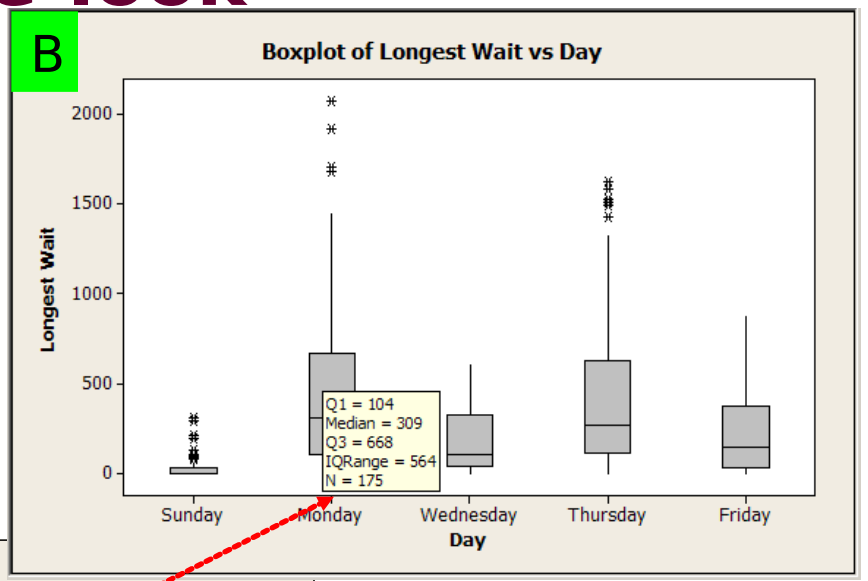
Prior to October 9 on average 74% of all calls were answered.

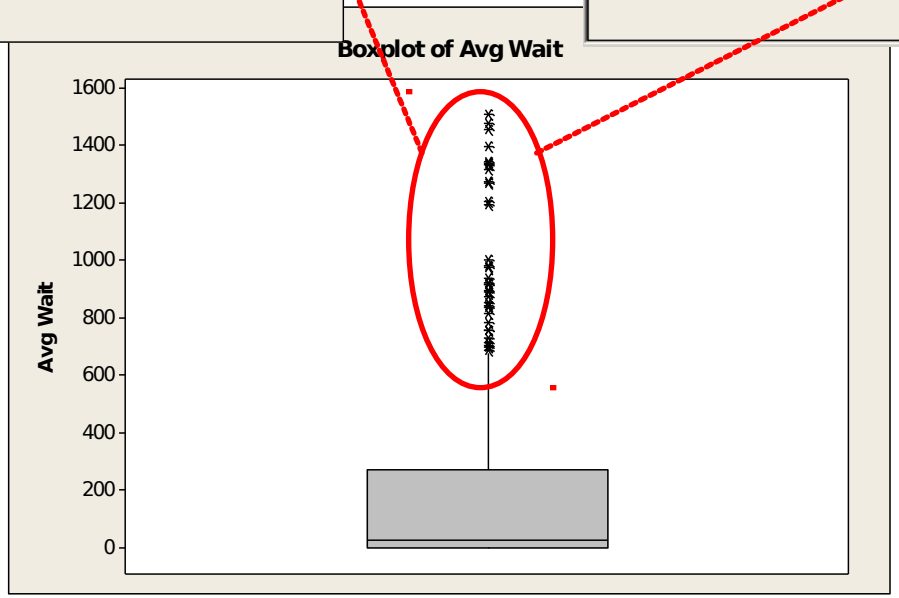
MEASURE: Baseline Data
Box Plot Re-look

A



B



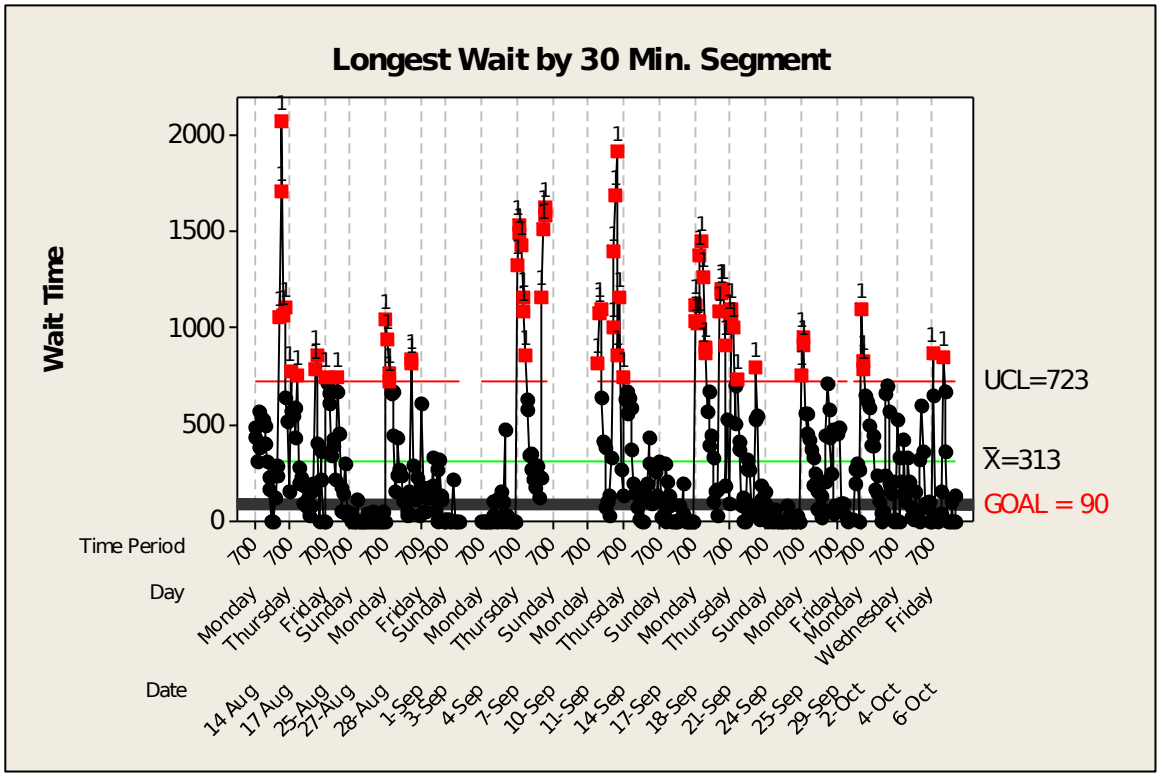


A: **50%** percent of calls were **NOT** answered during the busiest time periods.

B: 25% of the time periods had calls answered under 104 seconds.

25% of all time periods had longest hold times of over 11 minutes.

MEASURE: Longest Hold Times Process Analysis



WE HAVE A PROBLEM: Data shows many hold times are over 90 seconds.

ANALYSIS: Critical Xs

Three Factors that Influence Wait Time

- Call volume
- Number of agents available – Staffing level
- Handle time per call

ANALYZE: Quick Wins with Lean

Reduce Call Volume

- Proposed elimination of telephone consult process from appointing process

Increase Number Agents

- Addressed agent scheduling/time of day shifts/breaks/lunch, etc.
- Setup time/change over reduction
  - Eliminated startup setup by starting work 15 minutes early/100% agent ready
  - Eliminated afternoon shift change over with change in hours of operation
- Increase number of agents with change in days/hours of operation of central appointing
- Reduced training cycle from 6 to 4 weeks/lowered learning curve time

Reduce Handle Time

- Value add analysis
  - Non value added events eliminated
  - Shifted non-appointing duties to right process owners
- 5 S for Service
- Process flow improvement
  - Reorganized call center staffing layout
- Time trap/constraint identification
  - Agent scripting
  - Call tree changes
  - Changes in telephone management/two queue elimination

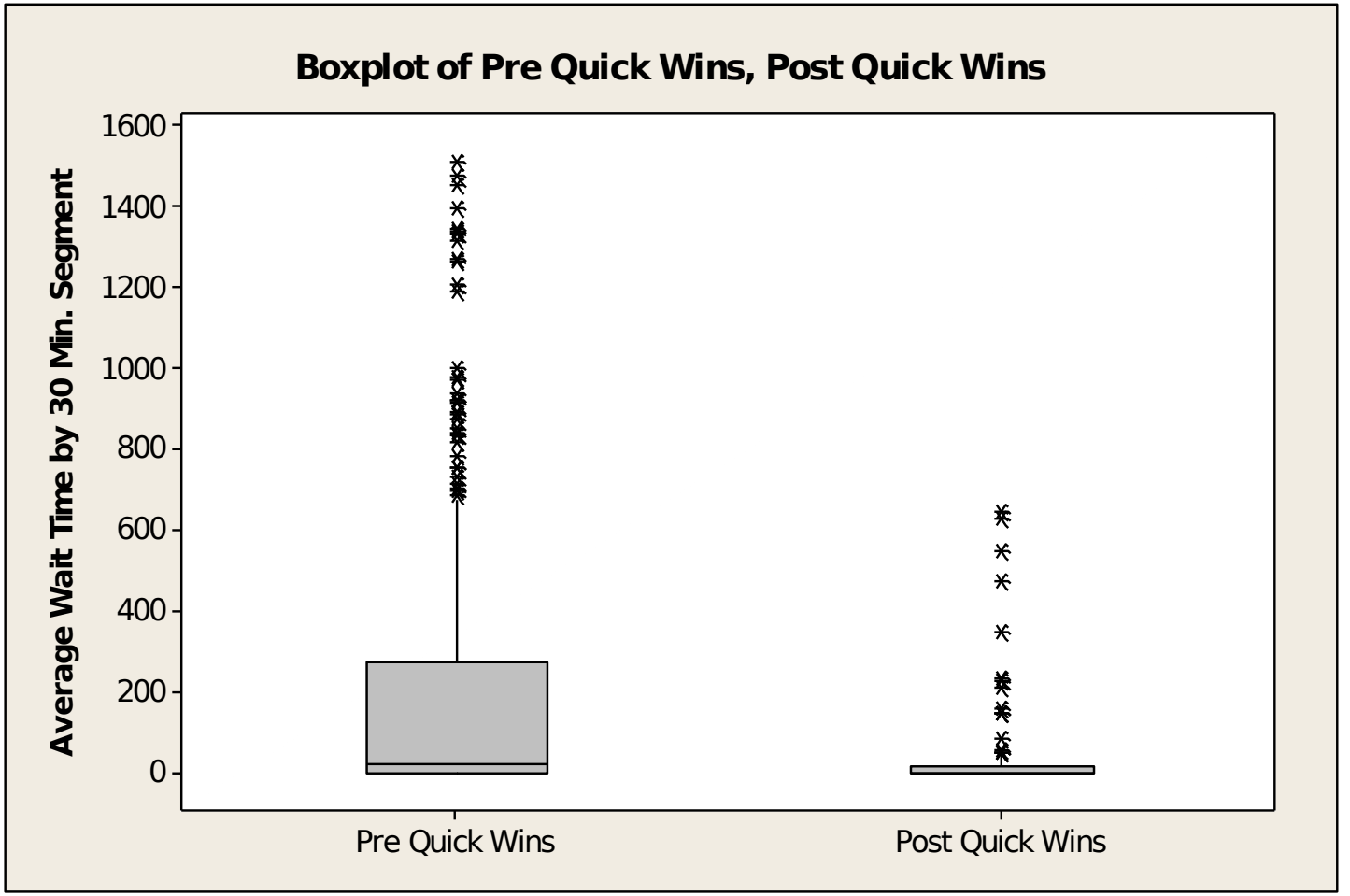
ANALYZE: Toll Gate Barriers Identified

- Obtaining Data by Individual Caller from Phone System
  - Currently data is presented using averages
  - Not a true view of individual caller hold and handle times
- Lack of Appointment Availability
  - Increases handle time
  - Increases TCON generation
  - Decrease patient satisfaction

The Way Ahead

- Analyze toll gate passed
- Project in improve stage of DMAIC
- Continuing monitoring/analysis of incoming data
- Solutions development for key factors
- Piloting of solutions
- Implement additional Quick Wins
- Calculate business impact

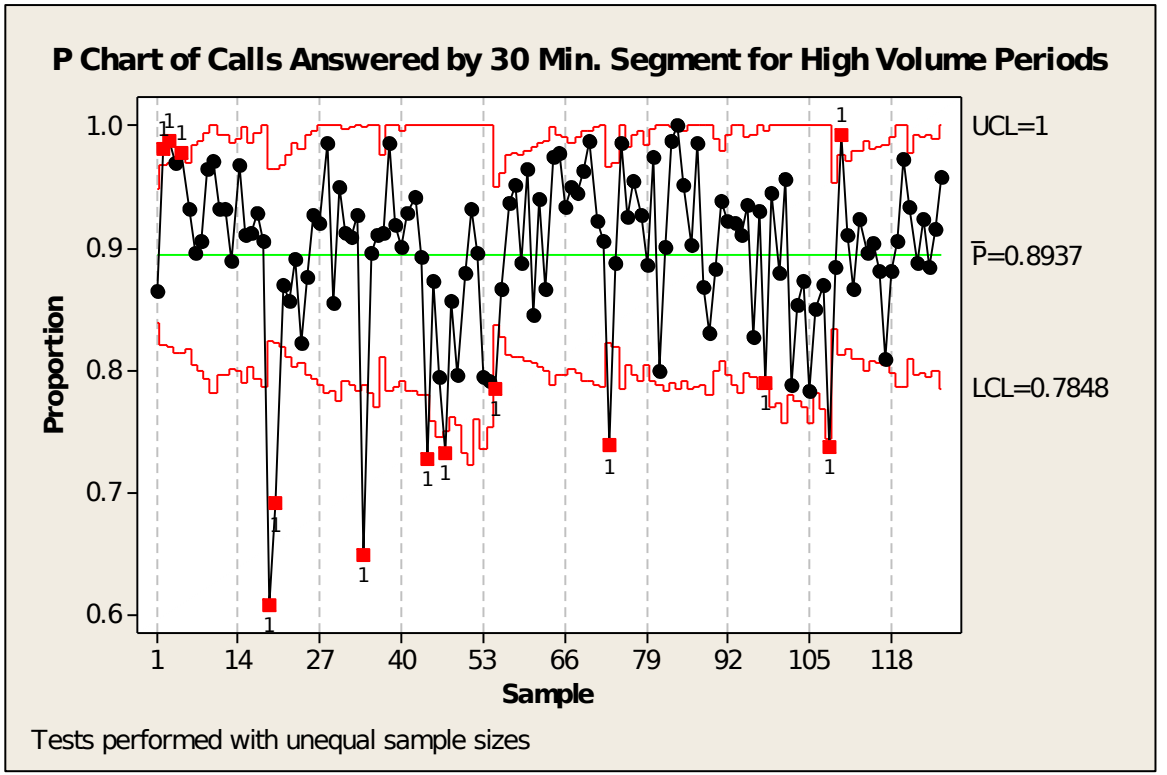
IMPROVE: Post Quick Wins



Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3
Avg Wait	126	0	39.98	9.93	111.47	1.00	1.00	2.00	20.00

Variable	Maximum
Avg Wait	648.00

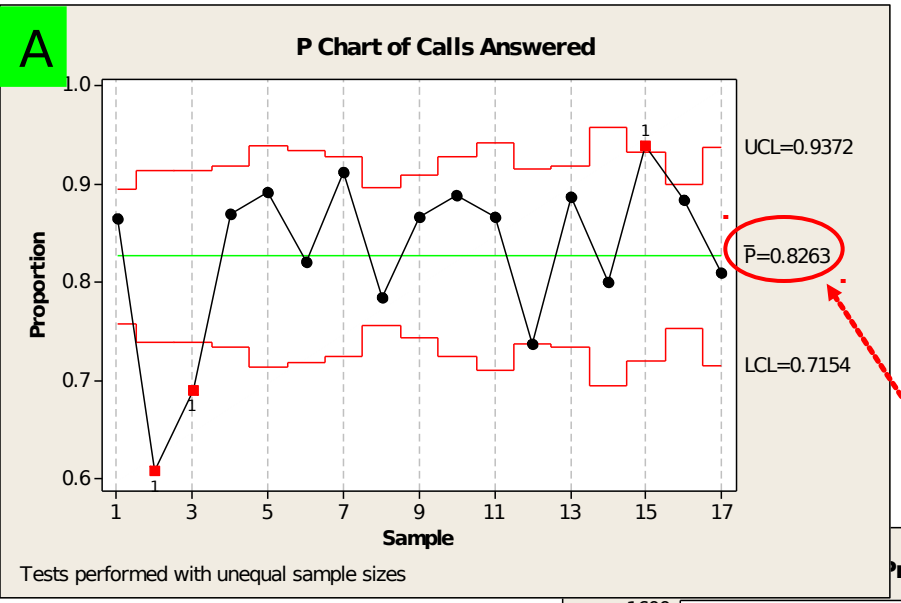
IMPROVE: Post Quick Wins



Before October 9 only 74% of calls were answered now we are at 89%.

Post Quick Wins
Box Plot – Re-look

A



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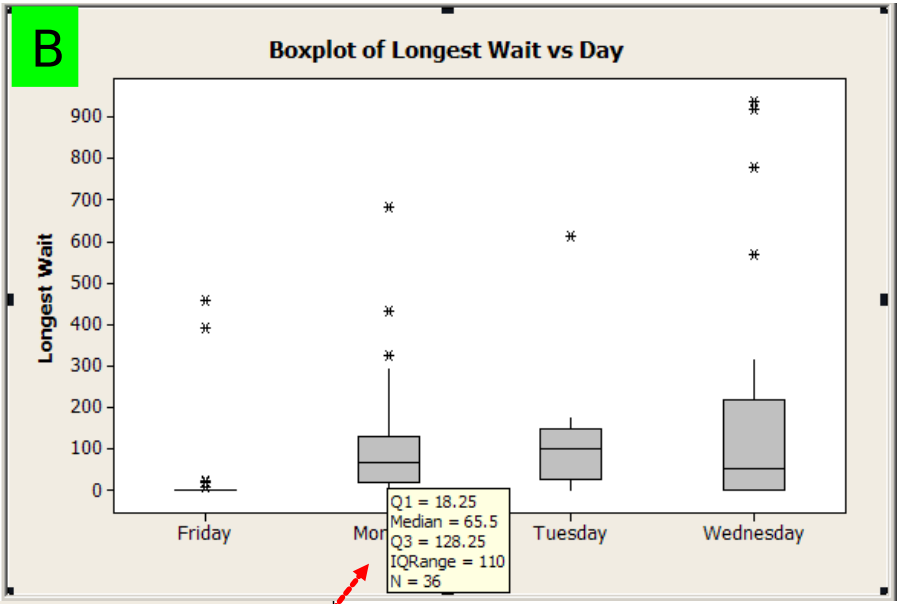

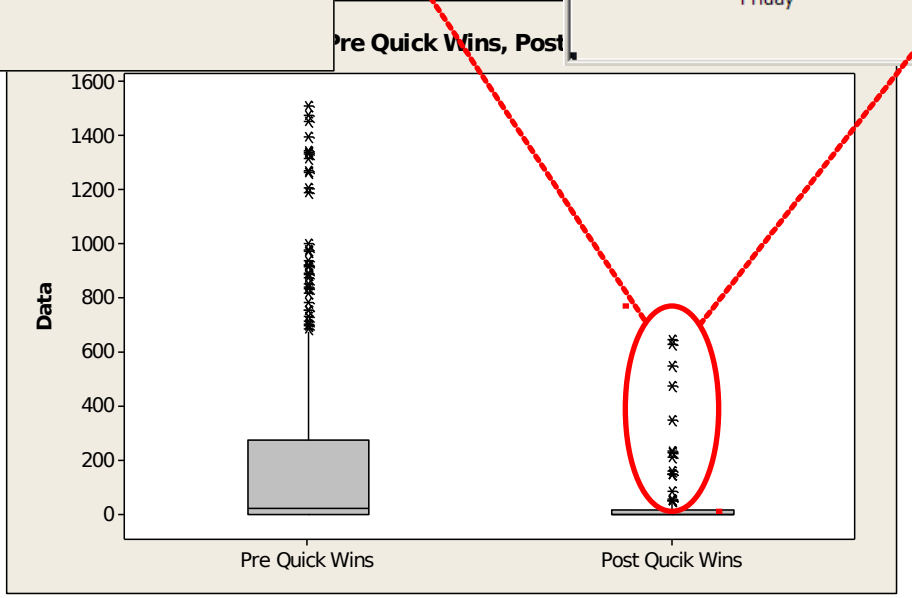

A: 82% percent of calls **WERE** answered during the busiest time periods.

B: 25% of the time periods had calls answered under 18 seconds.

25% of all time periods had longest hold times of over 2 minutes.

Additional LSS Outcomes

- Requirements identification for new telephone system
- Elimination of caller priority i.e. on base vs. off base
- Additional availability of appointments
- APLSS questions 9-11 submitted for revision
- Revised call tree = 89 seconds reduced to 26 seconds
- Some agent scripting changes
- Abandon call rate = reduced from 23% to 3.8%
- Fewer telephone consults generated = Lower back log
- Greater agent efficiency & higher morale = Greater productivity & lower turnover rate

Questions